Methods Prospective observational study of 408 stable chronic heart failure patients with left ventricular systolic dysfunction, managed in a multidisciplinary outpatient clinic, with repeat visit for clinical assessment (mean 354 days after recruitment). The association of between- and within-patient temporal differences in dose of heart failure pharmacotherapies, to all-cause mortality was studied after accounting for collinearity and confounding (including within- and between-patient temporal differences in clinical status).

Results During a mean follow-up period of 1060 days, 97 patients (21.6%) died. Between patient analyses revealed increasing dose of ACEI and β -blocker to be associated with reduced mortality, whilst increasing diuretic dose was associated with rising mortality, even after adjustment for confounders. Within patient analyses revealed that upward titration of β -blocker (but not ACEI) was associated with major reductions in mortality, even after accounting for confounders. Temporal changes in diuretic dose, haemodynamic status and renal function were not significantly associated with mortality.

Conclusions Sustained between-individual differences in ACEI, β -blocker and diuretic dose are associated with mortality risk after accounting for likely confounders. However, within individuals only escalation of β -blocker dose is associated with improved prognosis.

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QUANTIFYING THE ASSOCIATION BETWEEN MORTALITY AND CHANGE IN ACE INHIBITOR AND β -BLOCKER DOSE IN PATIENTS WITH CHRONIC HEART FAILURE: A PROSPECTIVE COHORT STUDY

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Background Dose escalation of evidence-based chronic heart failure pharmacotherapy in real-life does not approach that achieved in clinical trials; it is unclear whether this impacts upon mortality. We aimed to quantify the association between temporal changes in β -adrenoceptor antagonist (β -blocker) and ACE inhibitor (ACEI) dose and mortality in patients with chronic heart failure.